

IN THE CLAIMS:

1. (Currently Amended) A process for machining, ~~especially~~ and/or joining said workpieces (2) in the manufacture of body shells, ~~wherein the process comprising the steps of:~~

conveying the workpieces (2) are conveyed by using a conveyor (5) along a transfer line (3) and ~~are machined by~~ machining the workpieces using a plurality of said stationarily arranged, multiaxial robots (7, 8), ~~characterized in that~~ wherein the workpieces (2) are conveyed continuously and machined by the robots (7, 8) during the forward movement; ~~wherein~~

synchronizing the movements of the robots (7, 8) along the axes ~~are synchronized~~ with the conveying movement; and

detecting wherein the movement and the position of the workpieces (2) ~~are detected~~ with a sensor system (13) ~~and~~ with the detection being reported to a control system (12), which controls the conveyors (5) and the robots (7, 8).

2. (Currently Amended) A machining plant, ~~especially~~ and/or joining plant, for the manufacture of body shells, the plant comprising:

a conveyor (5) for the workpieces (2) ~~and~~ ;

a plurality of ~~said~~ multiaxial robots (7, 8) arranged stationarily along the transfer line (3), ~~characterized in that~~ wherein the conveyor (5) is designed as a continuously operating conveyor and the movements of the robots (7, 8) along their axes of the robots can be synchronized with the conveying movement for machining the moving workpieces (2); ;

~~wherein the machining plant (1) has~~ a sensor system (13) for detecting the movement and the position of the workpieces (2) ; and

a control system (12), to which the conveyors (5), the sensor system (13) and the robots (7, 8) are connected.

3. (Currently Amended) A machining plant in accordance with claim 2, ~~characterized in that~~ wherein the machining plant (1) has a monitoring system (11) for the synchronization of the movements of the robot.

4. (Currently Amended) A machining plant in accordance with claim 2 ~~or 3~~, ~~characterized in that~~ wherein the monitoring system (11) has one or more ~~said~~ means for optical imaging and evaluation.

5. (Currently Amended) A machining plant in accordance with claim 2, ~~3 or 4~~, ~~characterized in that~~ wherein the monitoring system (11) is connected to the control system (12).

6. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~ claim 1, ~~characterized in that~~ wherein the robot controls have dynamized machining programs that can be synchronized on-line with the movement of the conveyor.

7. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~ claim 1, ~~characterized in that~~ wherein the robots (7, 8) are designed as multiaxial articulated arm robots, preferably as six-axis industrial robots.

8. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~ claim 1, ~~characterized in that~~ wherein the robots (7, 8) are arranged stationarily and on one side or on both sides of the transfer line (3).

9. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~ claim 1, ~~characterized in that~~ wherein the robots (7, 8) are arranged at equally spaced locations.

10. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~ claim 1, ~~characterized in that~~ wherein the conveyor (5) has a plurality of said conveying sections with independent drives connected to the control system (12).

11. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~ claim 1, ~~characterized in that~~ wherein the tools (2) are arranged and clamped on carriers; especially pallets.

12. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~

claim 1, ~~characterized in that~~ wherein the robots (7, 8) carry said joining tools (10), especially welding tools.

13. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~ claim 1, ~~characterized in that~~ wherein the machining plant (1) has a loading, clamping and checking station (14) at the input.

14. (Currently Amended) A machining plant in accordance with ~~one of the above claims~~ claim 1, ~~characterized in that~~ wherein the machining plant (1) has a checking and unloading station (15) at the output.

15. (New) A joining plant, for the manufacture of vehicle body shells, the plant comprising:

a plurality of multiaxial industrial robots;

a conveyor means for conveying the workpieces along a transfer line along which said robots are positioned, with a continuously operating conveying section, said conveyor means being synchronized with movements of said robots for machining the moving workpieces;

a sensor system for detecting the movement and the position of the workpieces; and

a control system controlling the continuously operating conveyor with movements of said robots, said control system being connected to the conveyor means, said sensor system and said robots.

16. (New) A machining plant in accordance with claim 15, further comprising a monitoring system for the synchronization of the movements of said robot, said monitoring system being connected to said control system .

17. (New) A machining plant in accordance with claim 16, wherein the monitoring system has one or more optical imaging and evaluation means for optically imaging and evaluating the operation of said robots and said conveyor means.

18. (New) A machining plant in accordance with claim 17, further comprising a robot control with dynamized machining programs that can be synchronized on-line with the movement of the conveyor, each of said robots being associated with said robot control.

19. (New) A machining plant in accordance with claim 18, wherein said robots are six-axis industrial robots arranged stationarily and on one side or on both sides of the transfer line arranged at equally spaced locations.

20. (New) A machining plant in accordance with claim 19, wherein said conveyor means includes a plurality of said conveying sections with independent drives connected to the control system wherein tools are arranged and clamped on pallet carriers with said robots carrying welding tools.